

Abstract

A sprocket and a roller chain drive system including same are disclosed. The sprocket is a random engagement sprocket comprising a first plurality of A-profile teeth formed with a first asymmetric profile and a second plurality of B-profile teeth formed with a second asymmetric profile. The A-profile teeth each define a first pressure angle and the B-profile teeth each define a second pressure angle that is at least 5 degrees greater than said first pressure angle so that a minimum separation Δ is defined. The sprocket is defined with added chordal pitch reduction of 0.2% up to 1% relative to the link pitch of the associated roller chain. The sprocket can be defined with root relief and/or can comprise resilient cushion rings. Initial roller contacts made with the A-profile and B-profile teeth are modulated owing to the pressure angle separation and added chordal pitch reduction.